

*Extending Advanced
3D MBE Publishing and
Collaboration to Cloud
& Mobile Applications*

Anark Corporation
September 27, 2016

GLOBAL PRODUCT DATA
INTEROPERABILITY
S U M M I T
2016



Presentation Agenda

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- **Anark Overview**
- **Model-Based Enterprise**
 - **Basic Definitions**
 - **Performance Benefits, ROI**
 - **Status-quo, barriers, opportunities**
- **3PDF & HTML Capability Overview**
- **Advantages of Cloud & Web Based MBE Content**
- **Technology Demonstration & Deployment Q&A**
- **Conclusions**

Anark Corporation Overview

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- **Leading provider of MBE publishing & visual collaboration software and solutions** to enterprise manufacturing since 2000
- **Empowering MBE revolution** within Aerospace, Defense, Automotive, Energy, Industrial, Electronics, and Medical Equipment Sectors
- **Growing, profitable company**, with world-wide network of technology, integration, and channel partners
- Private company with **strong support from institutional and strategic investors**
- Anark Corporation **HQ in Boulder, Colorado**



- **3D MBD/PMI – Model Based Definition**

3D engineering Product Definition defined using 3D CAD Tools

3D model-based dimensions, tolerances, annotations, views

- **3D MBE – Model Based Enterprise**

Reuse of 3D MBD outside of 3D CAD systems

3D model-based drawings, TDPs, inspection documents, RFQ's, manufacturing process

***“A fully integrated and collaborative environment founded on 3D product definition detailed and shared across the enterprise; to enable rapid, seamless, and affordable deployment of products from concept to disposal.”
– Model-Based-Enterprise.org***

3D MBE Process Benefits

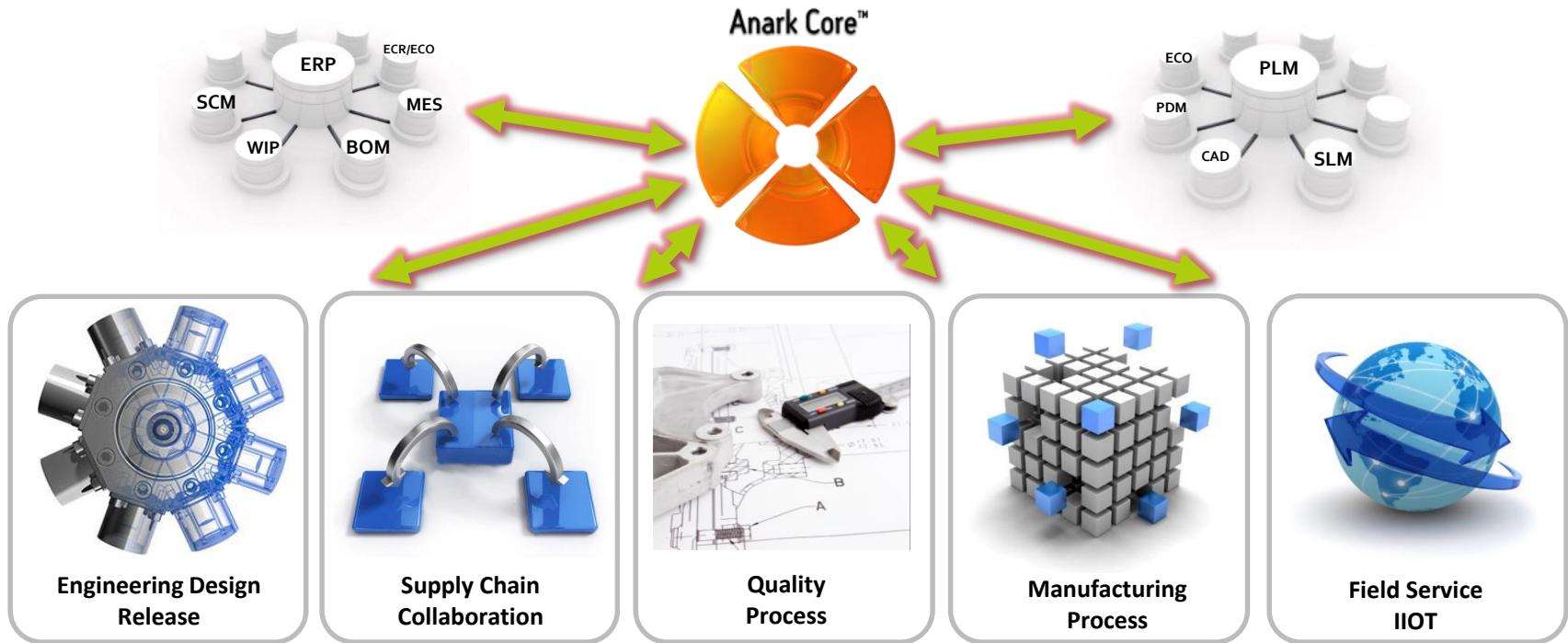
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	Performance Benefits	MBE Contributors to Savings
1	Easier to Accurately Interpret Information	<ul style="list-style-type: none"> Accelerates execution of process steps and overall pace of assembly. Eliminates costly errors caused by misinterpretation.
2	50% Reduction in Tooling Design & Fabrication Costs	<ul style="list-style-type: none"> There is no need to remodel the original design (typically from 2D Drawings) around which the Tooling/fabrication processes will be designed 'Original engineering design intent' is more easily and quickly understood by the tooling designer
3	30% Reduction in Overall Assembly Time	<ul style="list-style-type: none"> Complete Assembly process can all be seen within 1 - 3D PDF MBE document. The exact assembly process, animated in 3D leaves less room for shop floor confusion or delays
4	20% Reduction in Manufacturing and Supplier Scrap and Rework	<ul style="list-style-type: none"> Manufacturing and Supplier process documents automatically updated when an Engineering change or new version occurs Both Manufacturing and Quality gain a much clearer idea of the Engineering Designers Key Characteristics, Important Assembly Datums and Sequence

Source: US Dept. of Defense, Analyst reports & studies presented at conferences

Transform and Publish MBE-Enabled Content for the Extended Enterprise

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Anark Platform Overview

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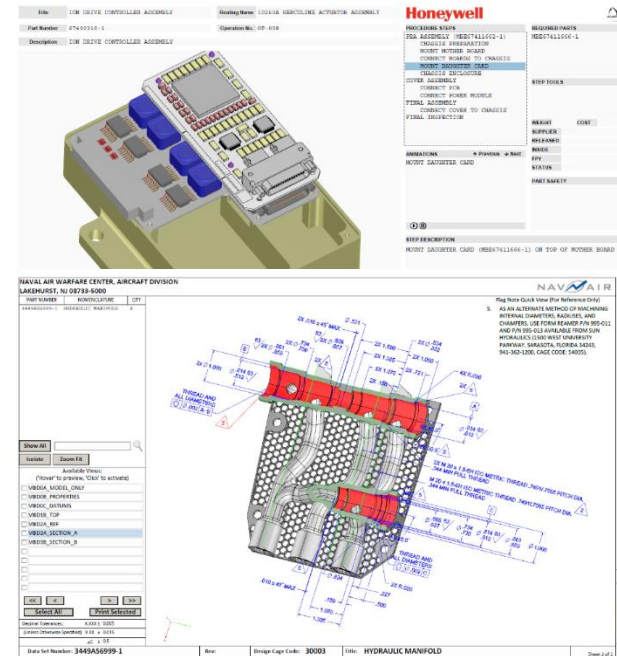
- Automated, easy to deploy, enterprise software that enables manufacturers to leverage valuable engineering design data and manufacturing information to deliver down-stream “fit-for-purpose” documents and content.



- Anark Core publishes accurate, high fidelity **3D PDF** and **3D HTML5** engineering release and manufacturing process content from virtually any CAD, PLM, or ERP data source.



- Anark MBWeb**—Cloud-based software that hosts template-driven, technical HTML5 content inside the firewall for all supported downstream use cases, with search and collaboration capabilities for knowledge workers throughout the extended enterprise.



MBEWeb: Visual Collaboration for the Knowledge Worker

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Host Technical Web Content Across the Extended Enterprise

- Allows knowledge workers across the extended enterprise to communicate and collaborate with fit-for-purpose technical web content from any device.
- Publish content with Anark Core into MBEWeb with up-to-date content derived from PLM, ERP, and other critical data sources, while providing links to easily download TDP file attachments.
- Built with scalable cloud technologies that can be installed inside the firewall, with content privileges inherited from PLM or ERP, insuring the protection of your data.

3D PDF and HTML5 Comparison



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3D PDF Capabilities:

- ISO Standard and free to consume using the ubiquitous Adobe Reader
- Can serve as contractually binding document
- Well suited to complex use-cases where data from multiple enterprise sources is required for template-based publishing
- Security of the PDF Container
- Involves certain limitations inherent in the PDF standard and Adobe Reader
- Limited to windows-based mobile devices
- Struggles with extremely large files--impeding collaboration and sharing

HTML5 Capabilities:

- Universally available W3C standard plus WebGL for 3D content enables unfettered consumption
- Extremely well suited to complex use-cases where data from multiple enterprise sources is required for template-based publishing
- Available on virtually all devices
- Virtually limitation free, enabling Anark to more fully address advanced MBE needs
- Allows content to be streamed, eliminating most file size issues

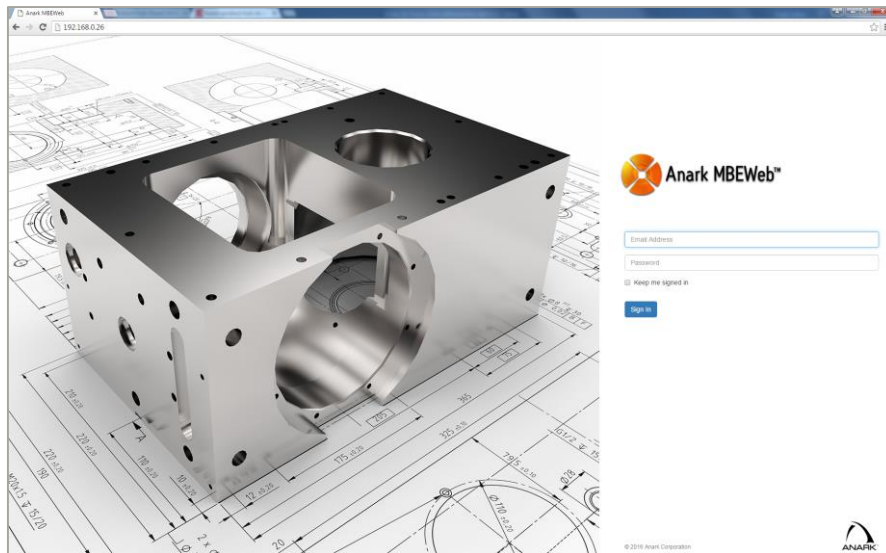




Product & Content Demonstrations

MBEWeb Benefits Over PLM, Custom Portals, SharePoint

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- **Inexpensive compared to PLM licenses.** Allows the system to be used widely across the extended enterprise.
- **Easy to deploy, easy to use system** does not require specialized user training often required for PLM software. Reduced IT and user support costs.
- **Role-and-use-case-specific content** can be published instead of hunt and peck for documents in PLM systems. More efficient access to critical data.
- **Content can be accessed from virtually any device,** anywhere in the enterprise: supply chain, manufacturing, customers. Allows flexibility with paperless access.
- **Integrated content-centric collaboration** supports critical technical conversations within the extended enterprise. More efficient than email-based collaboration.

Anark Advantages

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Anark Core™



Anark MBEWeb™

1. Easily unites **CAD/PLM with ERP** for “In-Context” Enterprise document generation
2. Transforms **multiple sources of product data** based on **Enterprise Business Rules (Anark Core recipes)**
3. Superior multi-CAD support with the most **precise & trustworthy MBD/PMI**
4. Server-based **automatic document generation & regeneration** based on source data changes
5. Template driven publishing with open-standard formats (**3D PDF & HTML with WebGL**)
6. Automated generation of **MBE-enabled cloud content to web & mobile users** for all supported use cases
7. Cloud-based hosting and **collaboration capabilities** for Industrial Internet applications



Q&A

Contact Info

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- www.anark.com
- **Jim Merry**
 - Director Enterprise Sales
 - Jim.Merry@anark.com
 - 240 674 5547